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## CLAIMS

1 1. A method for a first user to communicate in an Internet Protocol (IP) centric distributed  
2 network with a plurality of service layers providing a plurality of functions associated with each  
3 of the service layers, the method comprising:

4 accessing the network to establish a point of presence at an access management layer  
5 and a core portion of the network and to designate a default amount of bandwidth and a  
6 plurality of default setup parameters;

7 invoking service through an application server on the network to establish an amount  
8 of network resources requested by the first user;

9 establishing a transport session to create and manage a connection from the first user to  
10 a destination address; and

11 accounting for a service session within the IP centric distributed network.

1 2. The method of claim 1 wherein the plurality of service layers includes a network  
2 service function layer.

1 3. The method of claim 1 wherein the plurality of service layers includes a local service  
2 function layer.

1 4. The method of claim 1 wherein the plurality of service layers includes an access service  
2 function layer.

1 5. The method of claim 3 further including distribution of client server functions within  
2 the local service layer.

1 6. The method of claim 1 further including distribution of client server functions within an  
2 access network.

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7. The method of claim 1 further including distribution of client server functions within third party Internet application server.

1 8. The method of claim 1 wherein a visiting mobile host user establishes the accounting for  
2 a service session by going through a local service layer in the visiting network which establishes  
3 contact to a network service layer in a home network of the mobile host user.

1 9. The method of claim 1 wherein an authentication, authorization and accounting server  
2 in a network service layer is a server and wherein an authentication, authorization and  
3 accounting server in a local service layer is a client.

1 10. The method of claim 3 wherein the local service layer updates interim data and updates  
2 an authentication, authorization and accounting server in a network service layer.

1 11. The method of claim 4 wherein an usage accounting entry is created within the access  
2 network.

1 12. The method of claim 3 wherein an service accounting entry is created within the local  
2 service layer in an allied application server.

1 13. The method of claim 13 wherein the accounting actually accumulates on an usage  
2 accounting entry according to an accounting model indicator.

1 14. The method of claim 13 wherein the accounting actually accumulates on an service  
2 accounting entry according to an accounting model indicator.

1 15. The method of claim 1 further including an usage accounting entry at the access layer  
2 which accumulates data regardless of contents of an accounting model indicator.

1 16. The method of claim 1 further including invoking a specific usage accounting entry at an  
2 access network and a specific service accounting entry at an allied server application for each  
3 service invoked.

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1 17. The method of claim 16 further including an accounting model indicator which describes  
2 a collection method and policy rules, and wherein the accounting model indicator is transferred  
3 to the access network and an allied application server at a local service layer.

1 18. The method of claim 1 wherein a service accounting entry has a one to one relationship  
2 with a SDR.

1 19. The method of claim 1 wherein a service accounting entry can have a relationship with  
2 more than one usage accounting entry.

1 20. The method of claim 1 wherein a SDR can have a relationship with more than one usage  
2 accounting entry.

1 21. The method of claim 1 wherein a SDR can have a relationship with more than one  
2 service accounting entry.

1 22. The method of claim 1 wherein multiple services can be invoked in a single session.

1 23. The method of claim 1 wherein service is invoked through an allied application server at  
2 a local service layer, and wherein the allied application server seeks authorization from an  
3 authorization server based on an accounting policy within an accounting model indicator and  
4 wherein the authorization server sends details to the allied application server to create a  
5 service accounting entry.

1 24. The method of claim 1 further including creating an usage accounting entry at an access  
2 network wherein an allied application server sends instructions to the access network based on  
3 details within an accounting model indicator.

1 25. The method of claim 1 further including creating an service accounting entry at a local  
2 service layer wherein the local service layer sends instructions to the access network based on  
3 details within an accounting model indicator.

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1 26. The method of claim 1 further including layer three messages communicate to an access  
2 network and communicates directly to the local service layer to establish an usage accounting  
3 entry.

1 27. The method of claim 1 wherein the accounting is duplicated at at least two of the  
2 following group: an access network, a local service layer, and a network service layer.

1 28. The method of claim 1 wherein the accounting includes collecting multiple SDRs  
2 according to an accounting session ID and sending the multiple SDRs to a billing server at a  
3 network service layer.

1 29. The method of claim 28 further including creating a bill combining all SDRs.

1 30. The method of claim 28 further including transferring the accounting session ID from a  
2 local service layer to another local service layer to facilitate combining of multiple SDRs.

1 31. The method of claim 28 further including transferring a context message with the  
2 accounting session ID and a profile that includes an accounting model indicator during a  
3 handoff from one local service layer to another.

1 32. A system for a first user to communicate in an Internet Protocol (IP) centric distributed  
2 network with a plurality of service layers providing a plurality of functions associated with each  
3 of the service layers, the system comprising:

4 a means for accessing the network to establish a point of presence at an access  
5 management layer and a core portion of the network and to designate a default amount of  
6 bandwidth and a plurality of default setup parameters;

7 an application server on the network that invokes service to establish an amount of  
8 network resources requested by the first user;

9 a means for establishing a transport session to create and manage a connection from the  
10 first user to a destination address; and

11 a means for accounting for a service session within the IP centric distributed network.

1 33. The system of claim 32 wherein the plurality of service layers includes a network  
2 service function layer.

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1 34. The system of claim 32 wherein the plurality of service layers includes a local  
2 service function layer.

1 35. The system of claim 32 wherein the plurality of service layers includes an access service  
2 function layer.

1 36. The system of claim 34 further including client server functions distributed within the  
2 local service layer.

1 37. The system of claim 32 further including client server functions distributed within an  
2 access network.

1 38. The system of claim 32 further including client server functions distributed within a  
2 third party Internet application server.

1 39. The system of claim 32 wherein a visiting mobile host user establishes the accounting  
2 for a service session by going through a local service layer in the visiting network which  
3 establishes contact to a network service layer in a home network of the mobile host user.

1 40. The system of claim 32 wherein an authentication, authorization and accounting server  
2 in a network service layer is a server and wherein an authentication, authorization and  
3 accounting server in a local service layer is a client.

1 41. The system of claim 34 wherein the local service layer updates interim data and  
2 updates an authentication, authorization and accounting server in a network service layer.

1 42. The system of claim 35 wherein an usage accounting entry is created within the access  
2 network.

1 43. The system of claim 34 wherein an service accounting entry is created within the local  
2 service layer in an allied application server.

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1 44. The system of claim 41 wherein the accounting actually accumulates on an usage  
2 accounting entry according to an accounting model indicator.

1 45. The system of claim 41 wherein the accounting actually accumulates on an service  
2 accounting entry according to an accounting model indicator.

1 46. The system of claim 32 further including an usage accounting entry at the access layer  
2 which accumulates data regardless of contents of an accounting model indicator.

1 47. The system of claim 32 further including a specific usage accounting entry invoked at an  
2 access network and a specific service accounting entry invoked at an allied server application  
3 for each service invoked.

1 48. The system of claim 47 further including an accounting model indicator which describes  
2 a collection method and policy rules, and wherein the accounting model indicator is transferred  
3 to the access network and an allied application server at a local service layer.

1 49. The system of claim 32 wherein a service accounting entry has a one to one relationship  
2 with a SDR.

1 50. The system of claim 32 wherein a service accounting entry can have a relationship with  
2 more than one usage accounting entry.

1 51. The system of claim 32 wherein a SDR can have a relationship with more than one  
2 usage accounting entry.

1 52. The system of claim 32 wherein a SDR can have a relationship with more than one  
2 service accounting entry.

1 53. The system of claim 32 wherein multiple services can be invoked in a single session.

1 54. The system of claim 32 wherein service is invoked through an allied application server  
2 at a local service layer, and wherein the allied application server seeks authorization from an  
3 authorization server based on an accounting policy within an accounting model indicator and

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1 wherein the authorization server sends details to the allied application server to create a  
2 service accounting entry.

1 55. The system of claim 32 further including an usage accounting entry that is created at an  
2 access network wherein an allied application server sends instructions to the access network  
3 based on details within an accounting model indicator.

1 56. The system of claim 32 further including an service accounting entry that is created at a  
2 local service layer wherein the local service layer sends instructions to the access network  
3 based on details within an accounting model indicator.

1 57. The system of claim 32 further including layer three messages communicate to an  
2 access network and communicates directly to the local service layer to establish an usage  
3 accounting entry.

1 58. The system of claim 32 wherein the accounting is duplicated at at least two of the  
2 following group: an access network, a local service layer, and a network service layer.

1 59. The system of claim 32 wherein the accounting includes collecting multiple SDRs  
2 according to an accounting session ID and sending the multiple SDRs to a billing server at a  
3 network service layer.

1 60. The system of claim 59 further including a bill that combines all SDRs.

1 61. The system of claim 59 wherein the accounting session ID is transferred from a local  
2 service layer to another local service layer to facilitate combining of multiple SDRs.

1 62. The system of claim 59 further including a context message that is transferred with the  
2 accounting session ID and a profile that includes an accounting model indicator during a  
3 handoff from one local service layer to another.

1 63. A method for a first user to communicate in an Internet Protocol (IP) centric  
2 distributed network with a plurality of service layers including a network service function

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1 layer, a local service function layer, and an access service function layer providing a  
2 plurality of functions associated with each of the service layers, the system comprising:  
3 accessing the network to establish a point of presence at an access management layer  
4 and a core portion of the network and to designate a default amount of bandwidth and a  
5 plurality of default setup parameters;  
6 invoking service through an application server on the network to establish an amount  
7 of network resources requested by the first user;  
8 establishing a transport session to create and manage a connection from the first user to  
9 a destination address; and  
10 accounting for a service session within the IP centric distributed network.

1 64. The method of claim 63 further including distribution of client server functions within  
2 the local service layer.

1 65. The method of claim 63 further including distribution of client server functions within  
2 an access network.

1 66. The method of claim 63 further including distribution of client server functions within a  
2 third party Internet application server.

1 67. The method of claim 63 wherein a visiting mobile host user establishes the accounting  
2 for a service session by going through a local service layer in the visiting network which  
3 establishes contact to a network service layer in a home network of the mobile host user.

1 68. The method of claim 63 wherein an authentication, authorization and accounting server  
2 in a network service layer is a server and wherein an authentication, authorization and  
3 accounting server in a local service layer is a client.

1 69. The method of claim 63 wherein the local service layer updates interim data and  
2 updates an authentication, authorization and accounting server in a network service layer.

1 70. The method of claim 63 wherein an usage accounting entry is created within the access  
2 network.



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1 71. The method of claim 63 wherein a service accounting entry is created within the local  
2 service layer in an allied application server.

1 72. The method of claim 71 wherein the accounting actually accumulates on an usage  
2 accounting entry according to an accounting model indicator.

1 73. The method of claim 71 wherein the accounting actually accumulates on an service  
2 accounting entry according to an accounting model indicator.

1 74. The method of claim 63 further including an usage accounting entry at the access layer  
2 which accumulates data regardless of contents of an accounting model indicator.

1 75. The method of claim 63 further including invoking a specific usage accounting entry at  
2 an access network and a specific service accounting entry at an allied server application for  
3 each service invoked.

1 76. The method of claim 75 further including an accounting model indicator which describes  
2 a collection method and policy rules, and wherein the accounting model indicator is transferred  
3 to the access network and an allied application server at a local service layer.

1 77. The method of claim 63 wherein a service accounting entry has a one to one relationship  
2 with a SDR.

1 78. The method of claim 63 wherein a service accounting entry can have a relationship with  
2 more than one usage accounting entry.

1 79. The method of claim 63 wherein a SDR can have a relationship with more than one  
2 usage accounting entry.

1 80. The method of claim 63 wherein a SDR can have a relationship with more than one  
2 service accounting entry.

1 81. The method of claim 63 wherein multiple services can be invoked in a single session.

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1 82. The method of claim 63 wherein service is invoked through an allied application server  
2 at a local service layer, and wherein the allied application server seeks authorization from an  
3 authorization server based on an accounting policy within an accounting model indicator and  
4 wherein the authorization server sends details to the allied application server to create a  
5 service accounting entry.

1 83. The method of claim 63 further including creating an usage accounting entry at an  
2 access network wherein an allied application server sends instructions to the access network  
3 based on details within an accounting model indicator.

1 84. The method of claim 63 further including creating an service accounting entry at a local  
2 service layer wherein the local service layer sends instructions to the access network based on  
3 details within an accounting model indicator.

1 85. The method of claim 63 further including layer three messages communicate to an  
2 access network and communicates directly to the local service layer to establish an usage  
3 accounting entry.

1 86. The method of claim 63 wherein the accounting is duplicated at at least two of the  
2 following group: an access network, a local service layer, and a network service layer.

1 87. The method of claim 63 wherein the accounting includes collecting multiple SDRs  
2 according to an accounting session ID and sending the multiple SDRs to a billing server at a  
3 network service layer.

1 88. The method of claim 87 further including creating a bill combining all SDRs.

1 89. The method of claim 87 further including transferring the accounting session ID from a  
2 local service layer to another local service layer to facilitate combining of multiple SDRs.

1 90. The method of claim 87 further including transferring a context message with the  
2 accounting session ID and a profile that includes an accounting model indicator during a  
3 handoff from one local service layer to another.